

### **REMARKS**

Reconsideration and allowance of this application, as amended, is respectfully requested.

This amendment is in response to the Office Action dated May 8, 2003. By the present amendment, claim 14 has been amended to respond to the objection set forth on page 2 of the Office Action. By virtue of this amendment, it is respectfully submitted that the question raised in the objection with regard to claim 14 has been eliminated. More specifically, by the present amendment, it is clear that the phrase that "at least one element selected from the group consisting of nickel and titanium as an adding element in an amount of 10 atom % or more" applies to both parts "(a)" and "(b)." Accordingly, reconsideration and removal of the objection to claim 14 is respectfully requested.

Reconsideration and removal of the 35 U.S.C. §112, first paragraph rejection as failing to comply with the enablement requirement is also respectfully requested. In the Office Action, it is questioned in paragraph 5 as to where support is found for an electroconductive layer which includes palladium, nickel, cobalt, or titanium as a main constituting element disposed between one of the first or second capacitor electrode and an insulating film. Referring to claim 15, the term in question is set forth in the last paragraph of the claim which defines:

"forming an electroconductive film containing as a main constituting element at least one element selected from the group consisting of palladium, nickel, cobalt and titanium between said one of the first capacitor electrode or the second capacitor electrode and the insulating film."

It is respectfully submitted that this is supported in the specification by the sticking layer 26 shown in Figure 18. In particular, page 36, lines 9-12 define:

“the sticking layer 26 is an electroconductive film containing one element selected from palladium, nickel, cobalt and titanium as the main constituting element.”

Thus, the requirement of claim 15 for an electroconductive film containing the recited elements as a main constituting element is clearly supported by page 36, lines 9-12. With regard to the location of this electroconductive film between the insulating film and one of the first capacitor electrode or the second capacitor electrode, this is supported by page 36, lines 5-9 which states:

“a major difference between the semiconductor device of example 3 and that of example 1 is the presence of a sticking layer 26 between the insulating film 12b and the first capacitor electrode 15.”

As such, the specification on page 36 and Figure 18 of the drawings clearly support the present claim language, and reconsideration and removal of the 35 U.S.C. §112, first paragraph rejection is respectfully requested.

Reconsideration and removal of the rejections of the pending claims 1-6 and 14-18 over United States Patent No. 6,521,932 to Kumagai is also respectfully requested. With regard to this it is respectfully submitted that the Kumagai patent is not available as a reference at least on two grounds. These two grounds are discussed below.

(A) The Kumagai patent is unavailable as a reference based on the fact that the present application is entitled to the benefit of foreign priority to an early Japanese application under 35 U.S.C. §119.

The Kumagai patent has a U.S. filing date of March 14, 2000, prior to the U.S. filing date of March 8, 2001 of the present application. However, in a Letter Claiming Right of Priority filed on March 8, 2001 when the present application was filed, the right of priority based on the Japanese patent application no. 2000-063735 filed on March 8, 2000 was claimed. A certified copy of the Japanese patent application 2000-063735 was also filed with the Letter Claiming Right of Priority. Accordingly, Applicants have met the requirements for being entitled the benefit of foreign priority for the Japanese patent application, thus establishing a foreign priority date of March 8, 2000, prior to the U.S. filing date of March 14, 2000 for the Kumagai patent. Therefore, removal of Kumagai as a reference in this case is respectfully requested.

With regard to the matter of support for the present claims in the Kumagai priority document, it is respectfully submitted that the support for the claimed subject matter can clearly be seen in the figures filed in the priority document. For example, the structure shown in Figure 1 of the present application can clearly be seen in the drawings of the Japanese priority document. Also, the significant feature of the concentration of titanium being greater than 10 atom %, as defined in the present claims, and shown in Figure 4 of the present application, is also clearly apparent from the drawings of the certified copy of the priority document. Therefore, it is respectfully submitted that the priority document does, in fact, clearly support the present claims, and, on this basis, removal of Kumagai as a reference in this case is respectfully requested.

(B) Kumagai is also unavailable as a reference under the provisions of 35 U.S.C. §103(c).

At the outset, it is noted that the present application was filed after November 29, 1999, and, as such, it is improper under the provisions of 35 U.S.C. §103(c) to use prior art under 35 U.S.C. §103 if such a reference is assigned to the same assignee and only qualifies as prior art under one of the provisions of 35 U.S.C. §102(e), (f) or (g).

In the present instance, the present application has the same assignee as the Kumagai patent (i.e. Hitachi Ltd.). Although the rejections in questions are based on 35 U.S.C. §102(e), it is respectfully submitted that the actual statements of rejection set forth in the Office Action respectively present an obviousness type rejection under 35 U.S.C. §103 rather than an anticipation rejection under 35 U.S.C. §102(e). As such, the Kumagai patent is not available as a reference under 35 U.S.C. §103 since it shares the same assignee as the present application.

With regard to the question of whether the present rejection is actually an anticipation rejection under 35 U.S.C. §102(e) or an obviousness rejection under 35 U.S.C. §103/102(e), attention is directed to page 700-21 of MPEP 706.02(a) under the heading "Distinction Between 35 U.S.C. §102 and 103." In particular, as set forth in that section of the MPEP:

"for anticipation under 35 U.S.C. §102, the reference must teach every aspect of the claimed invention either explicitly or impliedly. Any feature not directly taught must be inherently present. Whereas, in a rejection based on 35 U.S.C. §103, the reference teachings must somehow be modified in order to meet the claims."

It is respectfully submitted that in the present situation some modification of the Kumagai reference is necessary to meet the present claims. For example, an important feature defined in the present claims includes the limitation that the adding element of nickel or titanium is in an amount of 10 atom % or more. This limitation in the present claims is based on Applicants discovery, shown in Figure 4, that significantly improved results are obtained at an atom percentage of greater than 10% for those materials. This is discussed, for example, on page 20, lines 20-25 which state:

“as is clear from Fig. 4, when the concentration of adding element of titanium becomes about 10 atom % or more, the adhesive fracture energy increases abruptly to remarkable improve the adhesiveness between the capacitor electrode film and the silicon oxide film.”

As such, the inventors in the present application recognize the criticality of using a concentration of titanium (or nickel, as discussed on page 21) of 10 atom % or greater to achieve an improvement in adhesiveness sought by the present invention.

As recognized in the Office Action on page 4 thereof, Kumagai fails to specifically teach the claimed limitation of 10 atom % or greater. Instead, the range for added elements of titanium and nickel set forth in column 7, lines 28-32 of Kumagai is a range of "not less than 0.14 but more than 25 atom %." This is shown, for example, in Figure 5 of Kumagai, and pertains to the internal stress in the ruthenium film rather than the adhesiveness. As such, in order to meet the terms of the present invention, it is necessary to modify the teachings of Kumagai to discard the range of 0.14 to 10 atom % and arrive at the claimed limitation of the adding element being 10 atom % or more. The modification requires the rejection to be presented as a 35 U.S.C. §103

rejection. Regarding this, attention is again directed to the above quoted portion of MPEP 706.02(a) which states:

“whereas, in a rejection based on 35 U.S.C. §103, the reference teachings must somehow be modified in order to meet the claims.”

Therefore, it is respectfully submitted that the actual grounds of rejection set forth in the Office Action present a rejection under 35 U.S.C. §103/102(e) rather than a rejection solely under 35 U.S.C. §102(e).

Accordingly, since Kumagai is not available as a reference in such a rejection based on 35 U.S.C. §103/102(e), removal of Kumagai as a reference in this case is respectfully requested.

As another point regarding this, even if Kumagai were available as a reference under 35 U.S.C. §103, it would fail to meet the requirements for motivation set forth in the case of *Ex Parte Lee* 31 USPQ 2d 1105(Bd. Pat. App. Inter, 1993). As forth in MPEP 2131.03 cited in the Office Action, “what constitutes a sufficient specificity is fact dependent.” MPEP 2131.03 goes on to state:

“If the claims are directed to a narrow range, the reference teaches a broad claim, and there is evidence of unexpected results within the claimed narrow range, depending on the other facts of the case, it may be reasonable to conclude that the narrow range is not disclosed with “sufficient specificity” to constitute an anticipation of the claims. The unexpected result may also render the claims unobvious...The Examiner must, in this case, provide reasons for anticipation as well as a motivation statement regarding obviousness, *Ex Parte Lee*.”

In the present instance, a narrow range of greater than 10 atom % is provided within the much broader range of 0.14-25 atom % specified in the reference. The unexpected result of the sudden increase in adhesivity for a

concentration of titanium or nickel greater than 10 atom % is shown in the present application in Figure 4. The cited reference to Kumagai fails to recognize this unexpected result in the amount of titanium or nickel, and provides no motivation which would lead one to arrive at this unexpected result. The sole motivation for this lies in Applicants own disclosure. As recognized in the case of *Ex Parte Lee*, relying upon Applicants own disclosure for a teaching of what is lacking from the prior art is inappropriate in formulating a rejection. Therefore, even if Kumagai were available under 35 U.S.C. §103, it would not provide a proper basis for a rejection under 35 U.S.C. §103 in light of the requirement set forth for a motivation in the case of *Ex Parte Lee*.

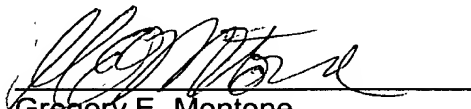
For the reasons set forth above, it is respectfully submitted that Kumagai is not available as a reference in this case, and its removal is requested. Upon removal of the reference to Lee, no outstanding rejection remains against the claims of the present application (noting that the 35 U.S.C. §112 rejection has already been addressed above). Therefore, reconsideration and allowance of this application, as amended, is respectfully requested.

If the Examiner believes that there any matters that can be resolved either by way of a telephone or personal interview, the Examiner is invited to contact Applicants undersigned attorney at the number indicated below to arrange for such an interview.

To the extent necessary, Applicants petition for an extension of time under 37 CFR §1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to

Deposit Account No. 01-2135 (Case No. 500.39830X00) and please credit any excess fees to such deposit account.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Gregory E. Montone', written over a horizontal line.

Gregory E. Montone

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**ANTONELLI, TERRY, STOUT & KRAUS, LLP**

GEM/kmh/dks  
Attachments